

NOTES ON THE GENUS *SYBOTA* WITH A DESCRIPTION OF A NEW SPECIES FROM ARGENTINA (ARANEAE, ULOBORIDAE)

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ABSTRACT. *Sybota atlantica* new species is described from the Atlantic coast of Buenos Aires Province, Argentina. The morphology of genitalia and carapace suggests that the new species forms a monophyletic group with *S. mendozae* Opell 1979 and *S. rana* (Mello-Leitão 1941). The female genitalia of the genus shows an unusual grade of entelegyny, with copulatory and fertilization ducts leading to a common tube.

Keywords: Uloboridae, *Sybota*, taxonomy, Argentina

RESUMEN. *Sybota atlantica* nueva especie es descripta para la costa atlántica de la provincia de Buenos Aires, Argentina. La morfología genital y cefálica sugiere que la nueva especie forma un grupo monofilético con *S. mendozae* Opell 1979 y *S. rana* (Mello-Leitão 1941). Los órganos genitales femeninos muestran un inusual grado de enteleginia, con los conductos de copulación y fertilización convergiendo en un tubo común.

The genera of the family Uloboridae and their Neotropical species were revised by Opell (1979). In that work, he defined the genus *Sybota* Simon 1892 and included three species: *S. abdominalis* (Nicolet 1849) and *S. osornis* Opell 1979 from Chile, and *S. mendozae* Opell 1979 from western Argentina. Females of the genus share with those of *Pole-necia* Lehtinen 1967 an abdominal projection extending beyond the spinnerets (Figs. 1, 3; Opell 1979: figs. 51, 102, 110, 116). Nevertheless, this feature does not reflect a close relationship between both genera. According to Coddington (1990), *Sybota* is the sister group of the clade *Orinomana* (*Hyptiotes* + *Miagrammopes*), all united by having the posterior lateral eyes on conspicuous tubercles. *Sybota* males have a well-developed conductor and a median apophysis with two or three projections (Figs. 5–7; Opell 1979: figs. 6A, B).

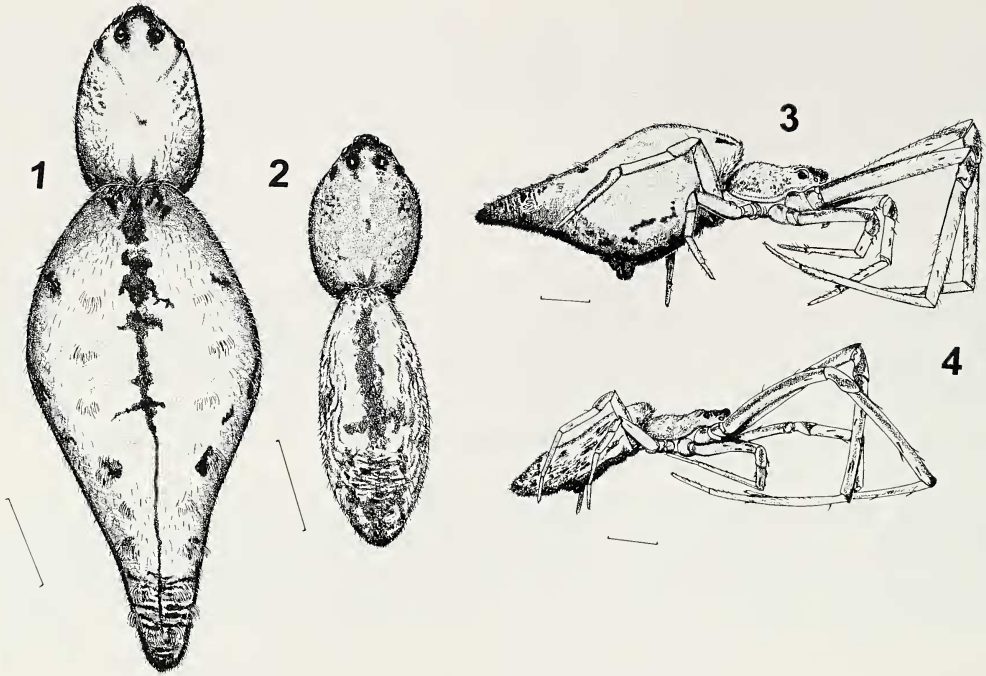
In the present paper I describe a new species, *Sybota atlantica*, from specimens collected in the coast of Buenos Aires Province (courtesy of Martín J. Ramírez, MACN), which seems to be closely related with *S. mendozae* because some cephalic and genitalic features (see discussion). Here I also redescribe the holotype of *S. rana* (Mello-Leitão 1941) from Salta province, a species not in-

cluded in the Opell's revision, and describe details of its genitalia, an aspect omitted in the original description (Fig. 11). Although *S. rana* is known from only a poorly-preserved specimen, apparently collected during the molting process, it can be placed close to the other two species.

The homology of the tegular sclerites of the male palps of the Uloboridae is still unclear. Coddington (1990) suggested that the terms median apophysis and conductor, as identified by Opell, should be switched. Nevertheless I maintained Opell's names only to ease comparison with previously described species.

METHODS

Specimens are deposited in the following institutions: Museo Argentino de Ciencias Naturales “Bernardino Rivadavia,” Buenos Aires (MACN, Cristina L. Scioscia), Museo de La Plata (MLP, Luis Pereira), and Instituto Argentino de Investigaciones de las Zonas Áridas, Mendoza (IADIZA, Sergio Roig Juárez). The format of descriptions follows Opell (1979). The abbreviations are: C = conductor; CD = copulatory duct; CO = copulatory opening; CY = cymbium; E = embolus; FD = fertilization duct; MA = median apophysis; PP = posterior plate; S = spermathecae; ST = subtegulum; T = tegulum. Abbreviations



Figures 1-4.—*Sybota atlantica* new species. 1. Female, dorsal view; 2. Male, dorsal view; 3. Female, lateral view; 4. Male, lateral view (palps omitted). Scale bars = 1 mm.

for eyes are standard for the Araneae. The female genitalia were cleared with clove oil and observed with compound microscope. Measurements are expressed in millimeters.

Sybota atlantica new species
Figs. 1-10

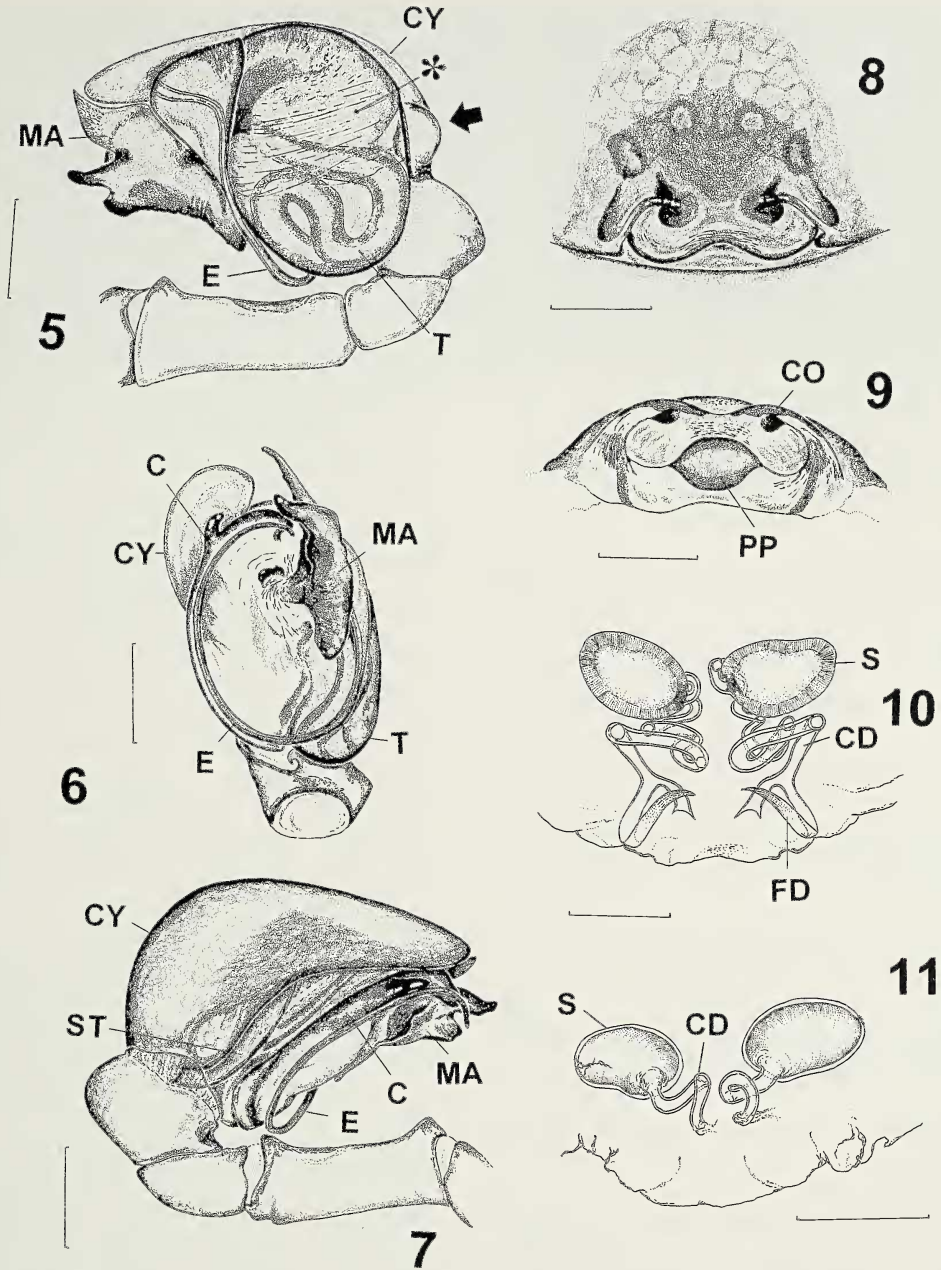
Types.—Male holotype, and four female paratypes from Argentina, Buenos Aires Province, Mar del Tuyú, 2 May 1981, M.J. Ramírez (MACN No. 9639, 9640 and 9641, respectively).

Etymology.—The specific name refers to the type locality, on the Atlantic Coast of Argentina.

Diagnosis.—Males differ from those of *S. abdominalis* and *S. osornis* by having a longer embolus and conductor (Figs. 5-7), and by having the AMEs on a conspicuous tubercle (Figs. 2, 4). Females resemble those of *S. mendocae* and *S. rana* by having an elongate carapace, the AMEs on a tubercle, and the convoluted copulatory ducts, but differ by the shape of the epigynum and spermathecae (Figs. 8-10).

Description.—*Male (holotype)*: Total length 4.76, carapace length 1.72, sternum

length 1.08. Leg I: femur length 3.32, tibia length 3.04, metatarsus length 3.56, tarsus length 0.96. Carapace brown with yellowish median area between median eyes and fovea, margins with diffuse dark dots, more apparent on anterior region. Eyes bordered by dark rings. Sternum dark brown with a reddish median stripe. Legs same color as carapace but with tenuous, darker, longitudinal dorsal bands. Abdomen dorsally whitish with a gray longitudinal band (Fig. 2). Sides of the abdomen with diffuse longitudinal bands (Fig. 4). Venter pale reddish with a dark central band between pedicel and spinnerets. Palp: Femur with an excavated area where the bulb presumably fits (Fig. 5), tibia with a prolateral translucent prolongation (Fig. 7) covering partially the base of cymbium, which has a retrolateral basal tubercle (Fig. 5, arrow). Copulatory bulb: retrolateral surface of tegulum with a translucent membrane (Fig. 5); median apophysis with one basal and three distal projections (Figs. 5, 6); conductor long with two prongs: the proximal digitiform and the terminal flattened; embolus long, with tip fitting into the terminal prong of conductor.



Figures 5–11.—Genitalia of *Sybota*. 5–10. *Sybota atlantica* new species. 5. Left male palp, retrolateral (arrow: cymbial tubercle; asterisk: tegular membrane); 6. Same, ventral; 7. Same, prolateral; 8. Epigynum, ventral view; 9. Same, posterior view; 10. Same, cleared, dorsal view. 11. *Sybota rana* (Mello-Leitão), cleared epigynum, dorsal view. Scale bars = 0.2 mm.

Female (paratype): Total length 7.35, carapace length 2.00, sternum length 1.32. Leg I: femur length 3.20, tibia length 2.60, metatarsus length 2.96, tarsus length 0.80. Color: Carapace, legs and eyes as in male, but AME

tubercle less pronounced; sternum as in male, but with a stripe restricted to the anterior half. Dorsum of abdomen yellowish with a gray longitudinal band, wider anteriorly and diffuse dark spots, more evident in caudal and lateral

areas; dorsal and dorsolateral surfaces with aligned bundles of long setae (Figs. 1, 3). Venter yellowish with a brown median stripe between epigastric furrow and spinnerets. Epigynum: Lateral lobes flattened with a wide posterior notch (Fig. 8), copulatory openings under two elevated anterolateral margins (Fig. 9). Copulatory and fertilization ducts leading to a common convoluted tube.

Natural history.—The specimens were collected in typical uloborid horizontal orb-webs on shrubs and other medium-sized plants near the sandy ground in Mar del Tuyú. The spiders rested with legs I and II extended anteriorly (Martín J. Ramírez pers. comm.).

Material examined.—Only the type series.

Sybotia mendozae Opell 1979

Sybotia mendozae Opell 1979: 496 (female holotype and three female paratypes from 7 km W of Mendoza, Argentina, collected in "chaparral" at an elevation of 1200 m, March-April 1958, B. Patterson col., in MCZ and AMNH, not examined.)

New record.—**ARGENTINA:** *Mendoza*, Divisadero Largo, 8 March 1993, Debandi and S. Roig col., 1 penultimate female (IA-DIZA). *Note:* Although this specimen is subadult, the internal genitalia are developed and almost identical to those illustrated by Opell (1979).

Sybotia rana (Mello-Leitão 1941)

Fig. 11

Uloborus rana Mello Leitão 1941: 111 (holotype N°14635 from Coronel Moldes, Salta, Argentina, in MLP, examined). Roewer 1954: 1344.

Sybotia rana Lehtinen 1967: 266.

Diagnosis.—The female resembles those *S. mendozae* and *S. atlantica* by cephalic morphology and by the long copulatory ducts, but are distinguished by the reniform spermathecae (Fig. 11) and the dorsal design of abdomen.

Description.—*Female (holotype, poorly preserved):* Carapace length, ca. 1.46; abdomen length, 3.96; leg I, femur length 2.34, tibia length 1.74, metatarsus length 2.00, tarsus length 0.74. Color: carapace dark brown; legs same color but with light longitudinal areas; chelicerae lighter than carapace. Abdomen (Mello-Leitão 1941, fig. 10) light brown with a dorsal longitudinal dark band (wider in front), and two large dorsolateral spots. The caudal parallel lines figured by Mello-Leitão

are no longer evident, probably faded. Epigynum: The poor condition of the specimen makes it impossible to distinguish the main epigynal structures; internally, only the reniform spermathecae and the distal portion of copulatory ducts remain; the preserved portion of them suggests that they were long (Fig. 11).

Material examined.—Only the holotype.

DISCUSSION

Sybotia atlantica, *S. mendozae* and *S. rana* differ from the Chilean species *S. abdominalis* and *S. osornis* by the longer carapace, with the anterior median eyes on a prominent tubercle, by the epigynum with a posterior notch, and by the smaller spermathecae, with long and convoluted copulatory ducts (Figs. 1, 8–11; Opell 1979: figs. 115–119). Given that these conditions are not present in other closely related uloborid genera, they seem to be synapomorphies of the three Argentine species. If long copulatory ducts are functionally correlated with long embolus, the males of *S. mendozae* and *S. rana*, which are still unknown, should also have a long embolus.

Although *Ponella* Opell 1979, some *Zosis* Walckenaer 1837 and some *Philoponella* Mello-Leitão 1917 (genera which are not closely related with *Sybotia*) also have long and convoluted copulatory ducts (Muma & Gertsch 1964; Opell 1979, 1981), they differ from *Sybotia* by being entelegynes (i.e., the copulatory ducts and fertilization ducts are separated), while *Sybotia* presents an intermediate and peculiar grade of entelegyny: the fertilization ducts arise from the proximal part of the copulatory ducts, without a direct connection with spermathecae. As noted by Opell (1983), the Uloboridae show a great diversity in genital features and comprises members both haplogyne, entelegyne and some intermediate types.

The observation of the web of *S. atlantica* in the field, and the photograph of an undetermined Chilean specimen showed in Figs. 12 and 13 (in American Museum of Natural History, not examined), confirm that these spiders rest with legs I and II anteriorly extended, and that they construct typical horizontal orb-webs, as mentioned by Opell (1984) based on a juvenile specimen photographed by Norman Platnick.



Figures 12–13.—*Sybota* sp. from Alto de Vilches, Talca, VIII Región, Chile. 12. Web; 13. Living specimen (photographs by Martín J. Ramírez).

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